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TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

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May 9, 2012

Mr. Gary G. Miller, Remedial Project Manager
U.S. EPA, Region 6
Superfund Division (6SF-RA)
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733



659092

Re: *Draft Sampling and Analysis Plan: TCRA Cap Porewater Assessment*, dated
April 2012
San Jacinto River Waste Pits Federal Superfund Site
Harris County, Texas

Dear Mr. Miller:

The Texas Commission on Environmental Quality (TCEQ) Remediation Division has completed review of the April 2012 Draft Sampling and Analysis Plan: Time Critical Removal Action (TCRA) Cap Porewater Assessment. The Draft document was prepared by Integral Consulting Inc. and Anchor QEA, LLC. The TCEQ comments on the document which were prepared by Charles Stone, Vickie Reat and Luda Voskov are presented below.

General Comments

1. The information resulting from this evaluation is intended to evaluate the performance of the TCRA cap in preventing the release of dissolved phase dioxins and furans from the area within the 1966 perimeter of the northern impoundments. We do not disagree that this evaluation will provide some indication of the current TCRA performance. Information gathered from this effort will not, however, address the long-term effectiveness of the TCRA to prevent the release of dioxins and furans from the area within the 1966 perimeter. Only long-term monitoring will do this. Additionally, the effort will not address potential releases from the side slopes of the impoundment or releases resulting from erosional forces.
2. In support of the upcoming remedia investigation/feasibility study (RI/FS), this Sampling and Analysis Plan (SAP) is intended to assess whether "... vertical gradients in concentrations of dioxins and furans in porewater of the cap exist, and whether porewater concentrations in the cap differ from concentrations in surface water above the cap ..." (Sec 1.6.1.1).

3. If tetrachlorodibenzo-p-dioxin (TCDD)/tetrachlorodibenzofuran (TCDF) is detected in pore water, as represented by the solid-phase microextraction (SPME) samplers, how much is significant and will analytical detection limits be low enough to discern this?
4. The Eastern Cell TCRA comprises a base layer of porous geotextile fabric that lies directly atop the submerged Eastern Cell (e.g., Sec 5.3 and Appendix C, Anchor QEA, 2012a). Use of an impermeable geomembrane was rejected due to foreseeable installation problems (e.g., Anchor QEA, 2011). However, the TCEQ was unable to find any product information or permittivity and poresize specifications for the permeable geotextile fabric (e.g., Report and Appendices, Anchor QEA, 2012a, etc.).
5. The term "porewater" is not specifically defined in the subject report. However, a "porewater sample" is graphically depicted (e.g., Figure A-2, Appendix A, Subject Report) as water occurring anywhere within the (submerged) TCRA Cap; "surface water" is depicted as occurring only above the cap.
6. The TCEQ notes that Figure 1-6, Figure 1-7, and Figure A-2 (SAP) do not accurately reflect the grain-size distribution of the submerged TCRA Cap. The submerged TCRA Cap comprises cobbles and boulders with no interstitial matrix and large-scale interstices.
7. SPME porewater samplers will be used to "... *assess the chemistry of porewater within the TCRA cap* ..." (Sec 1.2, SAP) for the purpose of satisfying project Data Quality Objectives. Specifically, this study is designed to address USEPA concerns regarding the post-TCRA porewater-to-surface water exposure pathway for 2,3,7,8-TCDD and 2,3,7,8-TCDF (Sec 1.4.4 and Sec 1.6.1, SAP) by determining whether "... *porewater concentrations in the cap differ from concentrations in surface water above the cap* ..." (Sec 1.6.1.1, SAP).
8. The TCEQ notes that water within the large-scale interstitial voids of the submerged TCRA Cap is effectively "surface water" that is chemically indistinguishable from "porewater." As such, the attempt to differentiate between the two waters will be obviated (see comments # 5 and #7 above).
9. The TCEQ acknowledges the potential for the future accumulation of fine-grained sediment at the base of the submerged TCRA Cap, within which actual sediment "porewater" chemistry may begin to reflect seepage across the porous geotextile fabric and begin to differ from that of "surface water." The TCEQ recommends that the SAP describe the procedure to be used to determine whether the SPME samplers are in actual sediment and the procedure to estimate the thickness of the sediment at that location.

10. Based on the particle-size description and given thicknesses of the capping stone, the TCEQ notes that obstructions will probably be encountered during installation of the sample probes through the cap to the geotextile layer. The TCEQ recommends including in the Sample Plan a procedure for dealing with obstructions that also avoids significant disturbance of sediment, if present.

Specific Comments:

1. Section 1.2 Introduction and Task Organization - This study employs SPME porewater samplers as developed by Dr. Danny Reible at the University of Texas and others. Has this technique ever been employed at other tidal estuaries, or with chemicals of potential ecological concern (COPECs) that are primarily dioxin/furans? If so, please provide this information along with a summary of the project and the reliability of the technique.
2. Section 1.6.1.3 Sample Collection Design - The discussion explains that in the absence of congener specific K_{p-w} values, the octanol-water partitioning coefficient (K_{ow}) will be used to estimate the concentration of each congener in porewater from the C_{PDMS} . The discussion cautions that the resulting C_{pw} (concentration in pore water) cannot be interpreted as an estimate of the actual porewater concentration; rather it will be used to compare samples, discern any vertical concentration gradients within the cap material, and to compare concentrations of TCDD and TCDF in pore water to those in overlying surface water. Please explain if the estimate is expected to over or under-estimate the pore water concentrations within the cap and why.
3. Section 1.6.2.1 Statement of the Problem - The full reference for the Anchor QEA (2012) citation is not provided in the list of references.
4. Section 1.6.2.1 Statement of the Problem - Future pore water monitoring may be relevant in the future, regardless of the results of this study.

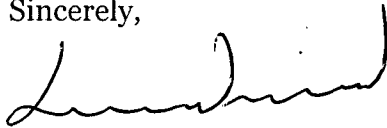
References:

- Anchor QEA 2011 *Draft Geomembrane Installation for the Time Critical Removal Action, San Jacinto River Waste Pits Superfund Site*, Memorandum to Valmichael Leos (USEPA), October 28, 2011.
- Anchor QEA 2012a *Revised Draft Final Removal Action Completion Report, San Jacinto River Waste Pits Superfund Site*, Anchor QEA, March 2012.
- Anchor QEA 2012b *Draft Chemical Fate and Transport Modeling Study, San Jacinto River Waste Pits Superfund Site*, Anchor QEA, February 2012.

Mr. Gary Miller
Page 4
May 9, 2012
Draft SAP: TCRA Cap Porewater Assessment

If you have any questions please contact Vickie Reat at 512-239-6873, Charles Stone at 512-239-5825, or myself at 512-239-6368.

Sincerely,

A handwritten signature in black ink, appearing to read 'Ludmila Voskov', with a stylized, flowing script.

Ludmila Voskov, P.G., Project Manager
Superfund Section
Remediation Division
Texas Commission on Environmental Quality

LV/sr

cc: Vickie Reat, TCEQ
Chuck Stone, TCEQ